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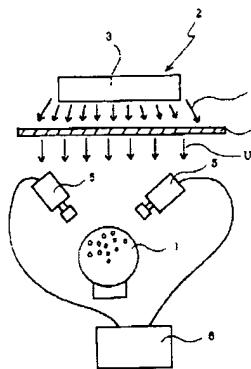
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## (54)【発明の名前】 ゴルフボール塗膜の膜厚測定方法及び装置

## (57)【要約】

【構成】 荧光増白剤を配合したクリアー塗料の塗膜が表面に形成されたゴルフボールに対して紫外線を照射し、得られた2次発光像をCCDカメラで観察すると共に、このカメラで取り込んだ画像を多值化処理して、上記塗膜の明暗度を算出し、この明暗度から塗膜厚さを計算することを特徴とするゴルフボール塗膜の膜厚測定方法。

【効果】 本発明によれば、ゴルフボールのクリアー塗膜の膜厚を簡単、迅速に、しかも正確に計測し得、塗膜の厚の差をも容易に識別することができる。



DERWENT-ACC-NO: 1997-060249  
 DERWENT-WEEK: 199706  
 COPYRIGHT 1999 DERWENT INFORMATION LTD

TITLE: Film thickness measuring method for inspecting coating irregularity of golf ball - involves processing received image that contains light and dark areas using pair of CCD camera

PATENT-ASSIGNEE: BRIDGESTONE SPORTS KK[BRID]

PRIORITY-DATA: 1995JP-0140027 (May 15, 1995)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN
JP 08309262 A	November 26, 1996	N/A	004	B05C

## APPLICATION-DATA:

PUB-NO	APPL-DESCRIPTOR	APPL-NO	APPL-DATE
JP08309262A	N/A	1995JP-0140027	May 15, 1995

INT-CL\_(IPC): A 63B045/00; B 05B015/00 ; B 05C011/10 ; B 05C013/00 ; G 01B011/02

## ABSTRACTED-PUB-NO: JP08309262A

BASIC-ABSTRACT: The method involves radiating UV beam (L) onto a golf ball (1) from an UV irradiation appts (2). The golf ball that is coated with a coating film, through an UV filter (4). The coating film is blended with a fluoresce whitening agent.

The radiated UV rays are reflected from the surface of golf ball. The reflected light beam is received by a pair of CCD camera (5) that processes t received image. The image of coating film has light and dark areas based on which thickness of coating film is measured.

ADVANTAGE - Enables easy discrimination of coating irregularity of coating film. Enables simple, quick and correct measurement.

CHOSEN-DRAWING: Dwg.1/4

## TITLE-TERMS:

FILM THICK MEASURE METHOD INSPECT COATING IRREGULAR GOLF BALL PROCESS RECEIV IMAGE CONTAIN LIGHT DARK AREA PAIR CCD CAMERA

Details Text Image FULL

U	1	Document ID	Issue Date	Page	Current OR	Current XRef	Position
32		US 5509657 A	19960423	8			Golf putt
33		US 5351962 A	19941004	8			Automated
34		US 2001012389	20011119	1			Golf swing
35		JP 11057104 A	19990302	4			Inspectio
36		JP 10318714 A	19981204	8			Quality i
37		JP 09326034 A	19971216	6			Visual in
38		JP 09061364 A	19970307	6			Illuminat
39		US 5777244 A	19980707	9			Visual in
40		US 5703687 A	19971230	12			Film thi
41		JP 08309262 A	19961126	4			



U.S. Patent

June 29, 1993

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FIG. 3A

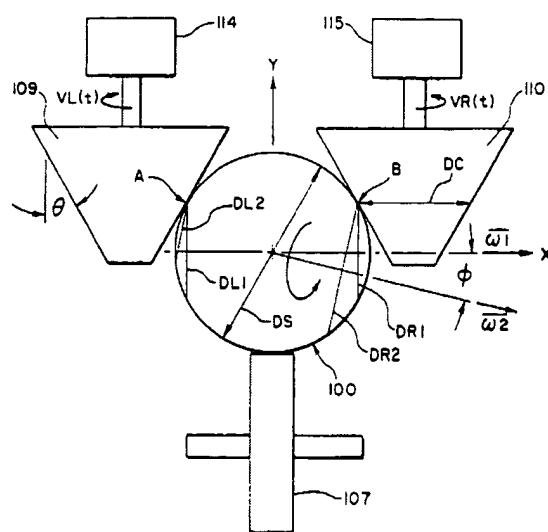


FIG. 3C

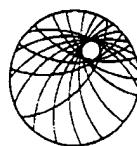
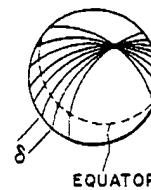


FIG. 3B



DOCUMENT-IDENTIFIER: US 5223793 A  
 TITLE: Apparatus for controlled rotation of a sphere or ball for inspecting or marking the surface with a predetermined pattern

## BSPR:

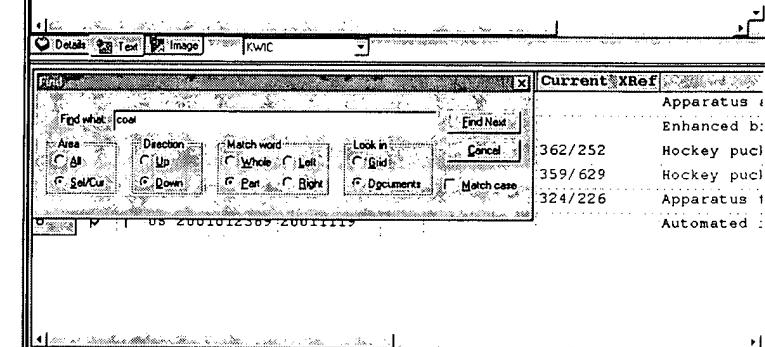
In the manufacture of spherical components, such as, bearing balls used in the automotive, aerospace and aircraft industries, it is often necessary to inspect the condition and appearance of the ball for defects which would be detrimental to their performance. Electromagnetic, ultrasonic, optical, x-ray and other instrumental techniques are used for such inspection. It is generally desirable to inspect the entire surface using small sensors or probes with sensing areas very much smaller than the total ball surface. Inspection of complete surface requires manipulating the sensor around a stationary ball or manipulating the ball surface past a stationary sensor or probe or a combination of such motions. In any case, controlled motion is required in order to realize complete inspection coverage of the entire surface.

## BSPR:

Similarly, in other manufacturing operations, controlled motion of a spherical surface for treatment, marking, or applications of other materials in pre-determined patterns is required. For such applications also, either an applicator or spherical object or both are required to be manipulated in order to complete the process.

## BSPR:

The invention is particularly useful for methods and apparatuses for manipulating the spherical object with the sensor, probe, applicator or other treatment device in a fixed position such as to effect complete coverage of spherical surface in the desired pattern or patterns in a highly repeatable manner.



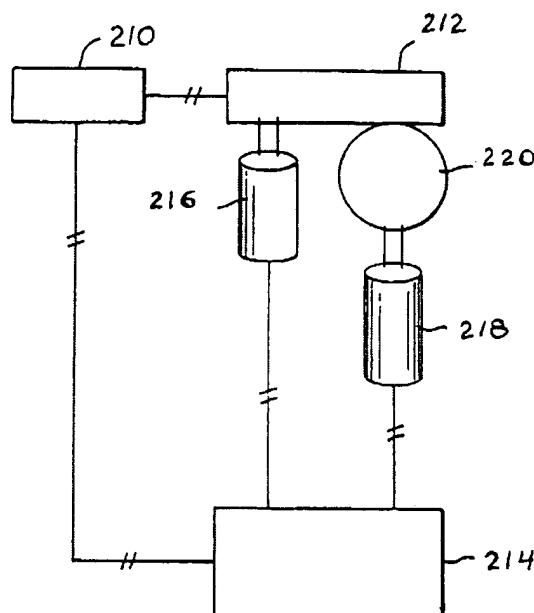


FIG. 13

DOCUMENT-IDENTIFIER: US 6315684 B1  
TITLE: Golf ball with soft core

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TTL: Golf ball with soft core

ABDI

ABPL:  
Disclosed herein is a golf ball utilizing a core that comprises at least two particular types of polybutadiene. In one aspect, a combination of a polybutadiene obtained from a cobalt catalyst is used in conjunction with a polybutadiene obtained from a neodymium catalyst. Also disclosed are golf balls comprising particular cover compositions. In one aspect, a cover composition is disclosed that includes a sodium ionomer, a magnesium ionomer, and a zinc ionomer. The golf balls exhibit improved distance while providing soft sound and feel.

BS DR

The present invention is directed to golf balls utilizing improved polybutadiene compositions for use in molded golf ball cores in conjunction with a particular type of cover composition. In one aspect, the improved polybutadiene compositions utilize one or more particular butadiene rubbers synthesized through the use of neodymium and cobalt-containing catalysts. The polybutadiene is preferably an ultra-high Mooney viscosity polybutadiene. In another aspect, the improved polybutadiene compositions utilize a particular solid butadiene rubber that exhibits an ultra-high Mooney viscosity and/or a high molecular weight and a low dispersity. The use of such butadiene rubber and/or blend of butadiene rubbers increases the resiliency of the ball. In addition, significantly improved mixing properties are achieved. In another aspect, the golf balls feature particular cover constructions that result in the balls exhibiting a soft feel and particular mechanical impedance.

BS PR

Two of the principal properties involved in the performance of golf balls are resilience and hardness. Resilience is determined by the coefficient of restitution (referred to as "C.O.R."), also expressed as the constant "e", which is the ratio of the relative velocity of two elastic spheres after direct impact to that before impact, or more generally, the ratio of the outgoing velocity to incoming velocity of a rebounding ball. As a result, the coefficient of restitution (i.e. "e") can vary from zero to one, with one being equivalent to an elastic collision and zero being equivalent to an inelastic collision. Hardness is determined as the deformation (i.e. compression) of the ball under various load conditions applied across the ball's diameter. The lower the compression value, the harder the material.

U	I	Document ID	Issue Date	Page	Current OR	Current XRef
18	<input checked="" type="checkbox"/>	US 2001000553		21		Method fo
19	<input checked="" type="checkbox"/>	US 2001000371		8		COATING M
20	<input checked="" type="checkbox"/>	US 2001000371		8		MARKED GC
21	<input checked="" type="checkbox"/>	US 2001000273		28		Low spin
22	<input checked="" type="checkbox"/>	US 6319563 B1	20011120	19	427/511	427/261
23	<input checked="" type="checkbox"/>	US 6319149 B1	20011120	10	473/342	228/125
24	<input checked="" type="checkbox"/>	US 6315915 B1	20011113	10	216/67	156/272.6
25	<input checked="" type="checkbox"/>	US 6315684 B1	20011113	40	473/377	524/432
26	<input checked="" type="checkbox"/>	US 6315681 B1	20011113	38	473/373	473/337
27	<input checked="" type="checkbox"/>	US 6310163 B1	20011030	124	526/318.6	428/36.9